

WHAT IS CLAIMED IS:

1. A high-frequency oscillation apparatus comprising:
 - an oscillator for oscillating at a specific frequency determined by a control voltage signal in a predetermined frequency modulation range;
 - a resonator coupled with a line transferring the oscillation signal of the oscillator, for resonating at a frequency out of the predetermined frequency modulation range;
 - a level detector coupled with the resonator, for detecting the resonant-energy level of the resonator; and
 - a control section for generating the control voltage signal according to the resonant-energy level detected by the level detector.
2. The high-frequency oscillation apparatus according to claim 1, wherein the line is a dielectric line comprising a dielectric strip sandwiched by electrically conductive planes.
3. The high-frequency oscillation apparatus according to claim 1, wherein the control section comprises:
 - an AD converter;
 - a storage section provided with a reference-voltage table and a reference-control-signal table;
 - a difference detection section; and
 - a control-signal compensation section, wherein the reference-voltage table stores the relationship between a detected-signal level and an oscillation frequency,
 - the reference-control-signal table stores the relationship among output timing, an intended oscillation frequency, and a control-voltage-signal level for obtaining the intended oscillation frequency.

4. The high-frequency oscillation apparatus according to claim 1, wherein a resonant frequency of the resonator is set to a frequency higher than the frequency modulation range of the oscillator.

5. The high-frequency oscillation apparatus according to claim 1, wherein a resonant frequency of the resonator is set to a frequency lower than the frequency modulation range of the oscillator.

6. A radio apparatus comprising:
a high-frequency oscillation apparatus according Claim 1; and
a transmitter for transmitting the oscillation signal.

7. A radar comprising:
a transmitter, the transmitter comprising a high-frequency oscillation apparatus according to Claim 1; and
a receiver for receiving a signal emitted by the transmitter and reflected
5 from an object.

8. A high-frequency oscillation apparatus comprising:
an oscillator for oscillating at a specific frequency determined by a control voltage signal in a predetermined frequency modulation range;
a first resonator coupled with a line transferring the oscillation signal of
5 the oscillator, for resonating at a frequency higher than the center of the predetermined frequency modulation range;
a second resonator coupled with the line transferring the oscillation signal of the oscillator, for resonating at a frequency lower than the center of the predetermined frequency modulation range;
10 a first level detector coupled with the first resonator, for detecting the resonant-energy level of the first resonator;
a second level detector coupled with the second resonator, for detecting the resonant-energy level of the second resonator; and

15 a control section for generating the control voltage signal according to
the difference between the resonant-energy levels detected by the first and second
level detection means.

9. The high-frequency oscillation apparatus according to claim 8, wherein
the line is a dielectric line comprising a dielectric strip sandwiched by electrically
conductive planes.

10. The high-frequency oscillation apparatus according to claim 8, wherein
the control section comprises:

5 a first AD converter coupled to the first level detector;
 a second AD converter coupled to the second level detector;
 a storage section provided with a reference-potential-difference table
and a reference-control-signal table;
 a difference detection section; and
 a control-signal compensation section, wherein
 the reference-potential difference table stores the relationship between
10 an oscillation frequency and the difference between the resonant-energy level of the
first resonator and the resonant-energy level of the second resonator,
 the reference-control-signal table stores the relationship among output
timing, an intended oscillation frequency, and a control-voltage-signal level for
obtaining the intended oscillation frequency.

11. The high-frequency oscillation apparatus according to claim 8, wherein
a resonant frequency of the first resonator is set to a frequency higher than the
frequency modulation range of the oscillator, and wherein a resonant frequency of the
second resonator is set to a frequency lower than the frequency modulation range of
5 the oscillator.

12. A radio apparatus comprising:
a high-frequency oscillation apparatus according to Claim 8; and
a transmitter for transmitting the oscillation signal.
13. A radar comprising:
a transmitter, the transmitter comprising a high-frequency oscillation
apparatus according to Claim 8; and
a receiver for receiving a signal emitted by the transmitter and reflected
5 from an object.
14. A high-frequency oscillation method comprising:
outputting an oscillation signal;
transferring the oscillation signal to a resonator so as to excite the
resonator;
5 outputting a predetermined signal from the resonator, the
predetermined signal being determined according to a frequency of the oscillation
signal;
generating a control voltage signal according to the predetermined
signal; and
10 using the control voltage signal for compensation of the oscillation
signal.
15. The high-frequency oscillation method according to claim 14, wherein
compensation of the oscillation frequency comprises:
changing the control voltage signal in a rectangular-wave manner
within a predetermined frequency range over time so as to change the frequency of the
5 oscillation signal.
16. The high-frequency oscillation method according to claim 14, wherein
the frequency of the oscillation signal is modulated from a predetermined center
frequency if the difference between a specified amount of frequency modulation and

an actual amount of frequency modulation is detected for compensation of the
5 oscillation signal.

17. The high-frequency oscillation method according to claim 14, wherein
a resonant frequency of the resonator is set to a frequency higher than a frequency
modulation range of the oscillation signal.

18. The high-frequency oscillation method according to claim 14, wherein
a resonant frequency of the resonator is set to a frequency lower than a frequency
modulation range of the oscillation signal.